Amendment to the Claims:

Please amend the claims as follows (this listing of claims replaces all prior listings):

1-3. (Cancelled)

4. (Currently Amended) The network address forwarding table lookup apparatus according to claim 6 3, wherein the network address is comprises an Internet Protocol (IP) address.

5. (Currently Amended) The network address forwarding table lookup apparatus according to claim 6 4, wherein the independent index is a bit '1', and the dependent index is a bit '0'.

6. (Currently Amended) A network An IPv4 address forwarding table lookup apparatus for identifying a 32-bit network address Internet Protocol (IP) address to determine a next-hop address to which data packets having the network address are IP address should be forwarded, the apparatus comprising:

a memory storing a five-level compression-tree trie forwarding table, the forwarding table having a first level module, a second level module, a third level module, a fourth level module, and a fifth level module;

the first level module comprising a first compression bitmap having two first level index entries directly addressable by the 17th address bit from the IP address network address of the data packets, and a first level pointer to the second level module, wherein each of the first level index entries alternatively comprises an independent index or a dependent index a bit '1' or a bit '0';

the second level module comprising second level primary entries directly addressable by the first level pointer and the first level index entries comprising the independent index bit '1', each of the second level primary entries alternatively comprising a next hop index indicating the next hop address for the data packets while if the first to the 17th address bits of the IP address

network address are sufficient to determine the next hop index, or a second level submodule ~~while~~ if the first to the 17th address bits of the ~~IP address~~ network address are not sufficient to determine the next hop address, wherein the second level submodule comprises a second compression bitmap having 128 second level index entries associatively addressable by the 18th to the 24th address bits from the ~~IP address~~ network address of the data packets, and a second level pointer to the third level module, wherein each of the second level index entries alternatively comprises the independent index or the dependent index ~~bit '1' or the bit '0'~~;

the third level module comprising third level primary entries directly addressable by the second level pointer and the second level index entries comprising the independent index ~~bit '1'~~, each of the third level primary entries alternatively comprising a next hop index indicating the next-hop address for the data packets ~~while~~ if the first to the 24th address bits of the ~~IP address~~ network address are sufficient to determine the next hop index, or a third level submodule ~~while~~ if the first to the 24th address bits of the ~~IP address~~ network address are not sufficient to determine the next-hop address, wherein the third level submodule comprises a third compression bitmap having two third level index entries associatively addressable by the 25th address bit from the ~~IP address~~ network address of the data packets, and a third level pointer to the fourth level module, wherein each of the third level index entries alternatively comprises the independent index or the dependent index ~~bit '1' or the bit '0'~~;

the fourth level module comprising fourth level primary entries directly addressable by the third level pointer and the third level index entries comprising the independent index ~~bit '1'~~, each of the fourth level primary entries alternatively comprising a next hop index indicating the next-hop address for the data packets ~~while~~ if the first to the 25th address bits of the ~~IP address~~ network address are sufficient to determine the next hop index, or a fourth level submodule ~~while~~ if the first to the 25th address bits of the ~~IP address~~ network address are not sufficient to determine the next hop address, wherein the fourth level submodule comprises a fourth compression bitmap having 128 fourth level index entries associatively addressable by the 26th to the 32nd address bits from the ~~IP address~~ network address of the data packets, and a fourth level

pointer to the fifth level module, wherein each of the fourth level index entries alternatively comprises the <u>independent index or the dependent index</u> ~~bit '1' or the bit '0'~~; and

the fifth level module comprising fifth level primary entries directly addressable by the fourth level pointer and the fourth level index entries comprising the <u>independent index</u> ~~bit '1'~~, each of the fifth level primary entries comprising a next hop index indicating the next hop address for the data packets;

wherein each of the first, second, third and fourth level index entries comprising the <u>independent index</u> ~~bit '1'~~ directly corresponds to one of the next level primary entry in sequence, and each of the first, second, third and fourth level index entries comprising the <u>dependent index</u> ~~bit '0'~~ associatively corresponds to the next level primary entry to which the previous same level index entry comprising the <u>independent index</u> ~~bit '1'~~ directly corresponds.

7-8. (Cancelled)